The Significance of Some Mental Disturbances During Convalescence from Surgical Operations

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SUMMARY

Early recognition and treatment of mental disturbances following operation may reduce the gravity of the complication and improve the prognosis. To aid in recognition, postoperative mental disturbances may be classified in accordance with the relative importance of organic as contrasted with psychogenic factors in development of them. Treatment of disturbances falling within any of the three classifications should be begun even before the exact classification is definitely established. It consists initially of promoting adequate nutrition, sedation with paraldehyde if necessary, constant special nursing care if possible, and frequent reassurance of the patient by the physician.

MENTAL disturbances during the postoperative period add to the morbidity of the operation and at times constitute a grave complication. Prompt recognition and early treatment of them can materially reduce this morbidity. A study of these postoperative mental disturbances suggests that they may be classified on the basis of the relative importance of organic as contrasted with psychogenic factors in the evolution of the reaction.

1. Toxic delirious reactions in individuals without evidence of previously existing damage to the central nervous system.

2. Toxic delirious reactions engrafted on already existing damage to the central nervous system.

3. Functional psychotic reactions precipitated by the stress of surgical operation.

The toxic delirious reactions usually appear after a latent period of from two to twenty days during which convalescence from the operation appears to be progressing satisfactorily. Such reactions may begin suddenly and dramatically or may begin insidiously with intervals of confusion and delirium first appearing at night, then gradually extending throughout the 24 hours. The symptoms may disappear after a few days or may endure for as long as several weeks. These reactions are characterized primarily by a disturbance in the level of consciousness, to which may be added disturbances of motility and of mood and a disordered thought content.

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The disturbance in level of consciousness may be characterized by a superficial alertness, the morbid nature of which is betrayed by the patient's distractibility and brief span of attention. More common, however, are various degrees of somnolence or stupor. Oftentimes the disturbance of motility is mild and is characterized only by disorganized unproductive activity such as restless movements of the extremities or picking at the bedclothes. At times, however, the activity of these patients may be so vigorous as to endanger their own welfare.

The disorder of mood is usually characterized by anxiety and depression of variable degree. The patient may have some awareness of the altered state of his mentation and experience distress over this change. The thought content is often characterized by hallucinations, those in the visual sphere occurring more commonly than those in the auditory sphere. Delusions are common but are apt to be changeable and unsystematized. During the early stages of the onset of such a reaction, the patient may be considered merely petulant or stupid. As the reaction develops the character of his thinking regresses to a childish and concrete level.

In reviewing the history of the patient's previous life, it is common to find that he has never before suffered any psychotic reaction. At times, however, it is learned that under similar circumstances, following an operation or in the presence of a severe infection, the patient has had a similar reaction. Age does not appear to play any significant part in the occurrence of reactions of this type. It may be presumed that the chief precipitating factors are the absorption of disintegrating tissue products and the nutritional deficiencies induced by the surgical operation and attendant procedures.[5]

The treatment of these conditions is similar to the treatment of any toxic delirious state.[2] It is important to promote adequate nutrition even by means of nasal tube feedings if necessary. It is unwise to rely entirely on the administration of intravenous fluids to accomplish this end. In the ordinary general hospital where the noisiness of these patients may produce a serious disturbance, it is usual for sedatives to be used in large amounts in an attempt to control the symptoms. Quite frequently the injudicious use of sedatives merely aggravates the delirious state. The use of barbiturates and bromides should be avoided. Paraldehyde is the sedative of choice[2, 9] and should be used in sufficiently large dosage to insure rest or sleep. As a rule 15 to 20 cc. may be given as an initial dose and the drug may be repeated in doses of 8 to 10 cc.

every two hours until the desired effect has been produced. If the drug is given by mouth, it is well to disguise the unpleasant taste as much as possible by giving it in iced lemon or grapefruit juice. The drug may also be conveniently administered by rectum or may be given intravenously with safety. When given by this latter route it may cause fits of coughing during the time it is being injected.

Violent motor activity on the part of the patient may necessitate mechanical restraint, but this should be used as sparingly as possible. As a rule side rails on the bed are not only an inconvenience to the attendant, but are actually an added hazard to the patient. These delirious reactions constitute a potentially grave emergency and justify constant attendance by special nurses whenever possible. Prolonged confinement in bed is highly inadvisable and as soon as possible the patient should be allowed out of bed. It is important to keep the patient's environment as stable as possible and to avoid sudden noises, shaking of the bed and unusual odors. As dim lights and shadows tend to confuse and frighten the patient, the room should be well lighted at all times. An especially important function of the special nurses should be to keep the patient in contact with reality and, with the attending physician, to offer frequent explanations and reassurance to the patient. Prognosis for ultimate recovery is good.

An example of this type of reaction is the case of a 38-year-old married woman who entered the hospital because of excessive vaginal bleeding. At operation the uterus, fallopian tubes, ovaries and appendix were removed. Three days after the operation, it was noted by the night nurse that the patient had become disoriented as to place during the night. The following day the patient thought she saw a man at the window, attempted to get out of bed, picked at the sheets and was mildly agitated. She misidentified people who passed her room and thought that her father, son and other relatives were standing just outside. On one occasion she thought that she saw the physician standing at the window laughing at her and on another occasion expressed the belief that her husband was dead. Within a period of a week the patient's condition had materially improved in that the psychotic features of her illness had subsided and she remained only somewhat anxious and apprehensive. Further convalescence was uneventful.

A similar type of toxic delirious reaction may occur in persons who have already suffered organic brain damage. The most common cause of damage of this type is cerebral arteriosclerosis or the degenerative changes associated with senility. The character of onset, the nature of the psychotic reaction and the treatment remain essentially the same.[1, 4, 8] The prognosis, however, must necessarily be more guarded. The presence of preexisting and unalterable organic damage means that as a rule recovery will not be complete. This incomplete recovery may be especially apparent to relatives who had not noticed, previous to the operation, the early subtle mental changes that may be associated with advancing arteriosclerosis or the advent of senility. It is by no means justifiable to look upon these reactions as hopeless and as representing altogether irreversible damage due entirely to vascular or senile mental changes. The regression of the delirious state may well leave the patient in relatively good mental health and the final prognosis should be reserved until the patient has had benefit of adequate therapy.

An example of such reactions is the following: A man 79 years of age was operated on for the repair of a right inguinal hernia. Three days after the operation the patient was noted to be "foggy—not orientated." The patient became restless, finally agitated and irrational. He was of the opinion that he had "finished that piece of work" and was feeling rather satisfied with himself. He thought that he was in an old store on Main Street and that the cross streets had not yet been named. He spoke with animation of picking olives and of developing a method of producing uniform color of the olives. Treatment consisted of inducing the patient to take adequate food and fluids. Paraldehyde was used as a sedative. At the end of approximately two weeks the acute symptoms of the psychotic reaction had subsided. At that time the patient was feeling quite well and except for a tendency to be somewhat rambling and repetitious in his conversation and mildly forgetful of recent events, his mental condition was satisfactory.

The third category of mental symptoms to be discussed embraces those reactions in which a major functional psychosis has been precipitated by the stress and trauma of a surgical operation. These reactions may appear immediately after operation or their appearance may be delayed for several days. The type of reaction is largely determined by the patient's previous personality, but is usually either of schizophrenic or manic-depressive character. During the early phases of their development, these reactions may be complicated by toxic delirium. Differentiation between major functional psychosis and toxic delirium at this stage can be far more easily made on paper than at the bedside. In the presence of true clouding of consciousness, it is inadvisable to make a diagnosis other than of toxic delirium. If toxic delirium is thought to exist, the initial treatment should be directed toward this condition. As the symptoms of the toxic delirium subside and the functional psychotic reaction emerges, it is important to evaluate it as early as possible since the average general hospital is not adequately equipped to provide care for the patient. For this reason arrangements should be made as soon as possible for care in an appropriate psychiatric hospital, if such care appears to be indicated.

It should not be presumed, however, that treatment of these reactions must await transfer to a psychiatric hospital. The fact that the patient is rendered relatively helpless following operation, or the nature of the surgical procedure itself,[6, 7] may activate latent anxieties to such a degree that a psychotic reaction results. During the early phases of its development this reaction may be alleviated by discussion of these anxieties and reassurance concerning them. Such prompt attention may at times prevent the development of a more severe and lasting morbid reaction.

An example of this type of reaction is the case of a 65-year-old unmarried woman who was operated on for carcinoma of the rectum. A colostomy was made and the rectum was removed. The patient's convalescence seemed satisfactory for the next ten or eleven days. At the end of that time the patient began to lose strength to the point

where she was unable to turn over in bed without aid from the nurse. She became nauseated and would not eat. Although the colostomy functioned well and the patient had been assured that the tumor was successfully removed, she felt "discouraged." She was quite certain that she could not get well. Thoughts of the colostomy were repugnant; she felt "unclean" and unable to face her friends. She would weep often as the result of these thoughts.

This patient had been reared by an over-solicitous mother who was morbidly concerned with the health of her children. The patient was always excessively meticulous and conscientious. Especially prominent was her inordinate concern about body cleanliness. Treatment of her condition consisted of long discussions concerning her ideas of cleanliness and her need for neatness. The means of caring for her colostomy were discussed in detail. In addition, the patient was repeatedly reassured that she would ultimately recover good health. At the end of two weeks the patient had improved enough to be able to take food fairly well and was even able to walk short distances in the hall. Within three months from the onset of her depressive reaction she was again relatively well-adjusted and carrying on her usual daily activities.

COMMENT

The role which surgical operation plays in precipitating these mental disturbances is probably not specific. The operation would appear to be merely one of several similar types of stress which may precipitate similar mental disturbances. Acute febrile illnesses, severe trauma and childbirth may be followed by disturbances of this kind. Classification and treatment of them may profitably be carried out along similar lines.[3]

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Discussion by A. VINCENT GERTY, M.D., *Pasadena*

The presentation of such a paper as Dr. Rushton's brings to our attention certain factors that may be utilized in preventing a rather costly convalescence or even mortality.

As I read Dr. Rushton's paper, prevention seemed to me the thing of greatest importance. It implies that to prevent postoperative psychosis, or to decrease the occurrence of such conditions, two things should be stressed: (1) A very thorough chronological history, and (2) better mental evaluation of the patient.

The family and personal history should be examined for mental disorders, alcoholic tendencies, drug addictions, psychoneurotic backgrounds.

This calls to my memory one case in which a thorough history was taken regarding the necessity of operation but the history of mental illness in the family and in the patient was not obtained—because the family purposely evaded the issue, feeling that the hysterectomy proposed would prevent certain mental symptoms which they saw developing from previous experience. Two days after operation the patient developed frank psychosis; later, evisceration peritonitis developed and the patient died.

If history of alcoholism or drug addiction is elicited, proper therapy with paraldehyde and fluids to prevent the toxic reaction following operation may prevent psychosis.

The second factor is the evaluation of the patient's personality by watching his attitude and behavior and following his stream of conversation. Thirdly, the emotional reactions should be noted, analyzing to a certain degree the patient's elations, expressions, fears, and swings of mood. Fourth, the content of thought should be observed to gain some insight into the patient's philosophy of living and life. Fifth, a survey of the patient's judgment, reasoning and insight may give some concept of his mental grasp of the seriousness and the nature of the surgical procedure.

Discussion by WALTER F. SCHALLER, M.D., *San Francisco*

Although in most cases of postoperative psychosis the patient ultimately recovers, the occurrence of such complications, always a matter of concern to the physician, raises the question as to the cause: Was it entirely psychological, was some unknown toxic factor responsible, were degenerative or arteriosclerotic brain changes present, or was there some inherent constitutional factor? These latter possibilities fall within the scope of neuropsychiatry in its proper application of the term, namely, the relationship of neurology to psychiatry.

Psychiatry has become so overwhelmingly oriented in the psychological approach that Dr. Rushton's presentation offers a very timely opportunity to stress organic causes of mental disturbances such as are activated by interferences with normal bodily processes, namely, surgical operation. Firstly, we have delirious states, so precisely and clearly outlined by the writer and most probably determined by toxic effects of tissue destruction; secondly, pathologic change within the brain itself; and, thirdly, the genetic factor so convincingly demonstrated by Kullman in his study of identical twins. In a paper read by Doctors Wilson and Rupp before the Section on Nervous and Mental Diseases of the American Medical Association in San Francisco in 1946, tabulations revealed a surprising incidence of mental disorders of all classes associated with organic diseases of the brain and other organs; in fact, there were such associations in somewhat over half of all cases in mental hospitals. Surprisingly, little is mentioned of these facts in present day psychiatric literature, which on the other hand, overstresses environmental and developmental factors, particularly in the tenets of the psychoanalysts.

As to treatment, I agree that paraldehyde is a very effective sedative and much more satisfactory in its effects than many of the newer pharmaceutical products. If it were not for the disagreeable taste and smell of this drug, it would probably displace many of those now in common use. I have, however, in selected cases used bromides and the barbiturates. The former must be closely checked for toxic and cumulative effects; the latter for prolonged action and side effects, especially of dreams and for aggravation of delirium.